

## MINUTES OF MEETING

### Water Quality Parameter Assessment Team (PAT)

April 1, 1997

9:00 AM - 12:00 PM

State Water Resources Control Board, First Floor Hearing Room

**PAT Members:** Terry Barry, Jerry Bruns, Brian Finlayson, Ted Roefs, Bill Alsop, Perri Standish-Lee, Tom Grovhoug, J.P. Cativiela, Lynda Smith, K.T. Shum, G. Fred Lee

**CALFED Team:** Rick Woodard, Carol Howe, Sarah Holmgren, Dale Flowers, Peter Mangarella, Judy Heath

**Others:** Lance Johnson, Bill Crooks, Nigel Quinn, Russell E. Fuller, Andy Rutledge, Tom Zuckerman, Wm. R. Johnston, Kevin Donhoff

#### Program Status

Rick Woodard began the meeting with a short synopsis on CALFED alternative development and the development of the programmatic water quality program.

#### Environmental Protection Agency 303(d) Listing of Impaired Water Bodies

Sarah Holmgren and Jerry Bruns (Central Valley Regional Water Quality Control Board) explained the 303(d) list and its relationship to CALFED's water quality parameters of concern. Sarah referred the PAT to the hand-out in their packet that compared the parameters on the 303(d) list to the parameters identified by the CALFED Water Quality Technical Group. CALFED's list has less parameters than the 303(d) list. She identified CALFED's problem and solution area geographic scopes and explained how use of the list would be limited to these areas. Jerry noted that:

- 303 (d) older pesticide data for chlordane, DDT and toxaphene are based on pre-1978 data and may not be reliable.
- Some data, such as the data at Vernalis, are much more reliable.
- Delta mercury data is measured against EPA water column criteria to determine consumer advisories.
- Chlorpyrifos data comes from toxicity testing and CA Department of Fish and Game data.

- Dissolved oxygen is a localized problem around the Stockton metro and Port of Stockton area.
- Carbofuran was a problem associated with rice pesticides but is not a problem anymore.
- Mercury may be a concern for wildlife but there is not a lot of information available.

Jerry said that the list is reviewed every other year and the Basin Plans every three years. The list has gone through three separate public processes.

Jerry mentioned that national and state levels groups are meeting to decide what criteria should be used to de-list parameters. He said that it is not as easy to get a parameter off the list as on. Jerry said that when you really start analyzing problems associated with the parameters of concern and their geographic locations the list becomes fairly distinct and identifiable:

- Upper Sacramento River - cadmium, copper, zinc
- Lower Sacramento River - mercury, chlorpyrifos and diazinon
- San Joaquin River - selenium
- Lower water bodies and Delta - pesticides (including chlorpyrifos, diazinon and unknown toxicity)
- Throughout system - mercury in fish tissue

The following comments were made regarding use of the EPA 303(d) list as the starting point for prioritization of CALFED water quality actions:

- List is still too long - need to prioritize. How will this be done? For example, how would mercury vs. copper in fish be prioritized? Mercury in fish is a human health concern but does not seem to harm the fish whereas copper in fish is not a human health concern but does harm fish.
- In Clear Lake there was some bird die off after they ingested mercury tainted fish.
- Suggest removing salinity from the parameters of concern list - it is covered under the X2 standards. [Need to study and document first].
- Need to clearly define that pre-feasibility will identify whether something is *really* a problem.
- Toxicity was conducted on standard test species not anadromous fish.
- Fish condition may be due to pathogens or salt imbalances - not necessarily parameters of concern.
- Selenium in Panoche Creek is from a geologic source - not agricultural drainage. There may be confusion of Panoche Creek with Little Panoche Creek. Parts per trillion are seen during storm events. [Grazing practices may be influencing these loadings].
- The 303(d) list is sufficiently flawed that it should be scrapped. May be used as a guide.
- The list is a good place to start for programmatic level analysis. The CALFED team needs to come up with targets and goals. If there is time the list could be refined. Don't need to prioritize at the programmatic level.
- Have there been any lawsuits in CA over the listings? [Yes, in Northern CA].

- All details might not be right but in general the list is correct. An issue paper on each parameter is needed that compares available literature and criteria.
- The list is a start but does not really work for drinking water problems.
- CALFED needs to be consistent with the Regional Board's Basin Plans. Should start with the list and shouldn't go above and beyond.
- CALFED needs to decide if it is going to add to the 303(d) list. CALFED probably does not want to assume regulatory role.
- If you want to focus on big problems target the parameters and areas that Jerry identified.
- Pesticides and mercury are most important to focus on.
- Selenium doesn't impact salmon that travel through the Delta but resident species may be impacted.
- Should use the 303(d) list as an input into process. Use the components of the list that are relevant. Older data could be dismissed. Say this is not an issue we're concerned about.
- Use drinking water regulations as an add on.
- Needs to be legally defensible rationale.
- Will need to set numbers for other parameters not on the list.
- Don't buy off on numbers but on approach and rationale.

PAT consensus on use of EPA 303(d) list was:

- *303(d) list is a basic piece of information that will be used to identify geographic problem areas for CALFED ecosystem and human health parameters of concern.*
- *Other pieces of information that should be used include information developed by expert panel groups such as the CUWA report developed by the urban water users.*

### **Ecosystem Water Quality Environmental Targets**

Carol Howe opened the discussion of environmental targets by stating that the team was considering using the Basin Plan numbers, where available, as the *environmental target* for the ecosystem. She stated that these seemed to be the most legally defensible numbers available. A discussion ensued which included the following comments.

- Targets should be obtainable. A temperature of 56° at Hamilton City is not obtainable. Response: [The performance target would ensure that improvements would be made in moving in the direction of meeting the targets].
- Inappropriate to use these numbers as targets. Should use numbers as goals to prevent adverse effect not set targets. Need to know problems before setting targets.
- Even though they are legally defensible there is concern and controversy over these numbers.
- If numbers need to be used the Basin numbers are the best we have.
- Although numbers are desired what do they mean? Need to be environmentally acceptable levels versus regulatory level.
- No money or resources to develop new numbers. Using performance targets to bring us closer to the numbers is a valid approach. We only have 12 weeks.
- Metal numbers not being met but they are still goals that should be driving where resources

go.

- If set standard/goal then don't meet it CALFED has failed and is liable legally.
- These are the safest most legally defensible numbers.
- Can come up with technique to try to meet target numbers.
- CALFED should create an Advisory Panel to develop a process so that later it would be legally defensible. [This group and CALFED are long term so we will have opportunity to do this].
- We have enough expertise in group. That know details behind the numbers.
- Expert opinion will be available to get us to these numbers.
- Stick with these numbers because we're at a programmatic level.
- Start from numbers but apply some reason. Basin plan numbers don't change much over time.
- Legally can we go with anything but these numbers?
- Need to achieve lower pollutants of concern not necessary meet targets. Need to generally reduce.
- What is the status of EPA overriding the Basin Plans?
- Need to lower the Cu that is actually causing problems not all Cu.

Jerry Bruns of the Central Valley Regional Water Quality Control Board stated that he is comfortable with cadmium, zinc, cadmium, and selenium numbers but not as comfortable with other numbers.

Rick Woodard summed up the discussion by stating PAT consensus was:

***Basin Plan criteria will be used as a basic source of environmental targets for CALFED programmatic actions and CALFED will proceed to develop a plan for improving the scientific basis for water quality objectives.***

Carol proceeded to explain that ecosystem Basin Plan numbers were only available for some parameters. Volunteers were requested from the PAT to help with narrative/quantitative targets to fill in these blanks. **Jerry Bruns, JP Cativiela, and Terry Barris** volunteered to work on the additional ecosystem targets. A schedule was set for the work to be completed and returned to Rick Woodard in a week (April 11) and then sent out to the PAT for comments.

Comments concerning development of targets for those ecosystem parameters not covered by the Basin Plan included:

- Ecosystem targets for EC and TDS are controversial and may be debated extensively. [Probably describe target by narrative versus number].
- Should consider using EPA number as it will soon be part of CA Toxics Rule.

## **Urban Water Quality Environmental Targets**

The discussion next focussed on the appropriate numbers or narratives to use for Urban Environmental Targets. The following comments were made:

- Regarding TOC - if it is low in the ecosystem it can be a problem but if it is low in the drinking water it is good.
- Expert panel report took most severe cases for by-products and treatment. These numbers are part of prediction into future.
- Is nitrate a problem in the Delta - is it broke?
- Nitrate number is inappropriate. Should be much lower.
- DOC may be more appropriate than TOC. DOC is better to judge treatability of the water.
- Drinking water perspective needs balancing with other perspectives.

Volunteers were requested to verify or modify (as appropriate) the urban water quality environmental targets. **KT Shum, Perri Standish-Lee and Lynda Smith** volunteered. A schedule was set for the work to be completed and returned to Rick Woodard in a week (April 11) and then sent out to the PAT for comments.

### **Agricultural Water Quality Environmental Targets**

The discussed moved to the agricultural water quality environmental targets. The following comments or suggestions were made:

- Should not have agricultural parameters of concern because CALFED has no actions to address them.
- Urban and agricultural water users have different salinity targets - which one is more important and which one is most controlling?
- Agriculture is causing it's own water quality problems.

The decision was made that for the agricultural targets CALFED staff will talk to agricultural specialists for consensus. This information will be distributed to the PAT for review.

### **Water Quality Modeling Capabilities**

The PAT discussed what models were available for the CALFED water quality parameters of concern.

Ted Roefs stated that metals transport on the Sacramento River needs examination. Need to decide if the metals are conservative. He stated that the Delta water quality model (hydrodynamics and salinity transport) is not important to the water quality common program but may be important to conveyance actions. Conveyance alternatives need inventive modeling. Selenium is not conservative so it is difficult to model. Ted said that someone should review the selenium data on the San Joaquin for fate and transport.

Some models available include:

1. LMA
2. Fischer-Delta Model
3. DSMZ
4. Mortality models (Brian Finlayson)

Other comments made regarding modeling included:

- KT Shum stated that it was not possible to model all conservative constituents.
- CALFED may not want to get into this level of detail. May not need model for our level - not fundamental to this group.
- A fundamental flaw is that we are modelling parameters not water quality. Need to couple levels of parameters with impacts to have a true water quality program.
- Some modelling is needed to determine whether target levels are met.
- Today we only have rudimentary tools.
- Not adequate modeling tools for CALFED's timeframe (approximately 12 weeks)..
- Some modelling needs done to intelligently target actions. Should get best professional judgement on what parameters are most important.
- How will you go from Performance Targets to Environmental Targets without models that allow quantification? [Implement action and then determine whether its had the desired effect].
- When writing the performance targets state that the process will involve adaptive management (i.e., going from 30,000 to 15,000 lbs. copper loading is the first step).
- Selenium is not conservative - is the water quality number important or is it the selenide (reduced) form that is important?

*The decision was made that initially no additional modelling (i.e., beyond that being conducted for the CALFED Storage and Conveyance and Ecosystem Restoration activities) will be pursued in relation to CALFED water quality issues.*

**K.T. Shum, Ted Roef, G. Fred Lee, and Brian Finlayson** will complete a summary write-up of models that are available and their applicability to CALFED water quality modelling needs. The write-up will be completed by the end of April and distributed the PAT for review.